

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method to provide cross-talk cancellation in a multiple input multiple output system comprising a plurality of outputs (~~OUT1, OUT2, ..., OUTn~~), said method ~~comprises~~comprising a step of executing for a first signal (~~Si~~) a cross-talk cancellation, **characterized** in that said method further comprises

determining ~~during a first phase and~~ according to a heuristic model, for said first signal (~~Si~~) to be transmitted to a first output (~~OUTi~~) of said plurality of outputs (~~OUT1, OUT2, ..., OUTn~~), at least one dominant interfering tone (~~D~~) of at least one second signal (~~Sj~~) to be transmitted to a second output (~~OUTj~~) of said plurality of outputs (~~OUT1, OUT2, ..., OUTn~~), said at least one dominant interfering tone (~~D~~) being a tone of said at least one second signal (~~Sj~~) that would generate cross-talk upon said first signal (~~Si~~) when being transmitted to said first output (~~OUTi~~); and

executing said step of cross-talk cancellation for said first signal (~~Si~~) ~~during a second phase~~ for said at least one determined dominant interfering tone (~~D~~) of said second signal (~~Sj~~).
2. (Currently Amended) The method to provide cross-talk cancellation according to claim 1, characterized by executing said step of determining ~~during a first phase and according to a heuristic model~~ said at least one dominant interfering tone (~~D~~), for each first signal (~~Si; i=1...n~~),

and out of all tones of all other second signals ($S_j; j=1 \dots n; j \neq i$) being different of said first signal (S_i); and executing said step of cross-talk cancellation for each said first signal ($S_i; i=1 \dots n$) ~~during said second phase~~ for each determined dominant interfering tone (D) of one of said all other second signals ($S_j; j=1 \dots n; j \neq i$).

3. (Currently Amended) The method to provide cross-talk cancellation according to claim 1, characterized in that said step of determining ~~during a first phase and according to a heuristic model~~ said at least one dominant interfering tone (D) comprises:

determining a utility value for each predetermined tone of said second signal (S_j), said utility value reflecting a utility of canceling said predetermined tone and being defined ~~in~~ as a function of an increase in transmission rate it would cause to said first signal (S_i) in the event when all other interfering signals ($S_l; l \neq j$ and $l \neq i$) on that predetermined tone would have been cancelled; and

in the event when said utility value exceeds a utility threshold, defining said predetermined tone as a dominant interfering tone (D).

4. (Currently Amended) The method to provide cross-talk cancellation according to claim 1, characterized ~~in~~ by executing said step of cross-talk cancellation ~~during said second phase~~ upon reception of said first signal (S_i) in order to compensate cross-talk being imposed upon said first signal (S_i) during transmission of said first signal (S_i).

5. (Currently Amended) The method to provide cross-talk cancellation according to claim 1, characterized in by executing said step of cross-talk cancellation ~~during said second~~ phase, before transmission of said first signal ~~(S_i)~~ in order to pre-compensate cross-talk that will be imposed upon said first signal ~~(S_i)~~ during transmission of said first signal ~~(S_i)~~.

6. (Currently Amended) The method according to claim 1, characterized in by executing said ~~first phase~~ determining step during initialization of said multiple input multiple output system.

7. (Currently Amended) A module ~~(MOD)~~ to provide cross-talk cancellation in a multiple input multiple output system that comprises a plurality of outputs ~~(OUT1, OUT2, ..., OUT_n)~~, said module comprises an executing means ~~(EXE)~~ coupled to each one of said plurality of outputs ~~(OUT1, OUT2, ..., OUT_n)~~ to execute for a first signal ~~(S_i)~~ a cross-talk cancellation, characterized in that said module further comprises

determining means ~~(DET)~~ to determine ~~during a first phase and~~ according to a heuristic model, for said first signal ~~(S_i)~~ to be transmitted to a first output ~~(OUT_i)~~ of said plurality of outputs ~~(OUT1, OUT2, ..., OUT_n)~~, at least one dominant interfering tone ~~(D)~~ of at least one second signal ~~(S_j)~~ to be transmitted to a second output ~~(OUT_j)~~ of said plurality of outputs ~~(OUT1, OUT2, ..., OUT_n)~~, said at least one dominant interfering tone ~~(D)~~ being a tone of said at least one second signal ~~(S_j)~~ that would generate cross-talk upon said first signal ~~(S_i)~~ when being transmitted to said first output ~~(OUT_i)~~; and that said executing means is coupled to said determining means ~~(DET)~~ in order to execute said cross-talk cancellation for said first signal ~~(S_i)~~

~~during a second phase~~ according to said at least one determined dominant interfering tone ~~(D)~~ of said second signal ~~(S_j)~~.

8. (Original) The module according to claim 7, characterized in that said multiple input multiple output system comprises a central office and that said module is comprised in said central office.

9. (Original) The module according to claim 7, characterized in that said module is comprised in said multiple input multiple output system which is comprised in a Digital Subscriber Line system.